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NATURAL ENEMIES OF FIELD TICKS

P. A. Petrishcheva
Z. M. Zhmayeva
Dept of Parasitol and Med Zool,
Inst of Epidemiol and Microbiol
Acad Medical Sci USSR

In 1935, the Soviet scientist Shpringgol'ts-Shmidt reported that Pica pica leucoptera ate Haemaphysalis concinna ticks. Nevertheless he never went so far as to study the gastric contents of this bird.

In 1947, while visting a reindeer breeding farm in the southern regions of the Sikhote-Alin mountains, the authors made observations which confirmed Shpringgol'ts-Shmidt's theory. They noticed that, on a murky, drizzly day, Cyanopica cyana pallescens Steg were picking ticks off spotted reindeer. After the back of one reindeer had been deticked the magpies flew off, carefully selected another animal and renewed their hunt for ticks.

The authors were amazed at the placidity of the reindeer and concluded that the action they were witnessing was natural for both reindeer and magpies. The authors, their curiosity aroused, requested that some of these magpies be trapped. This was done immediately, and shortly thereafter studies were conducted on the stomachs of ten magpies. Stomach contents of five of the magpies trapped in June are listed in the table below:

Ixodes Ticks in the Stomachs of Syanopicacyanapallescens Stag

	Tick Genus	Type of Ticks	Number	Condition of Ticks
1.	Ixodes persulcatus	Male	2	Well digested. White remains of several dorsal and ventral coroyx peritrema
	" "	Female	12	
	" "	Nymph	8	
	Haemalphysalis concinna	Female	15	
2.	Ixodes persulcatus	Male	1	Almost complete, but well digested
	" "	Female	11	

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	Tick Genus	Type of Ticks	Number	Condition of Ticks
3.	Ixodes persulcatus	Male	5	Well preserved. Complete and almost complete females.
	" "	Female	29	
4.	" "	Male	4	
	" "	Female	5	
	Derma centor silvarum	Female	1	
5.	Ixodes persulcatus	Male	4	Only ventral peritrema
	" "	Female	23	
	Haemaphysalis concinna	Female	6	
			126	Total -- 16 males, 101 females, 8 nymphs [sic].

It was interesting to note that the stomachs of three magpies trapped in October in that same general area contained no ticks. This was in accord with available data suggesting the complete absence, or very small number, of ticks which exist in nature or on cattle during this period of the year.

In the summer of 1948 the authors again observed incidences of magpies eating ticks, in this case off the backs of cows. The above occurred in the area around the upper reaches of the Sumbara River near the villages of Duzlu-Tepe and Kurudzhey (South-western Kopet Daga, Karakalinskiy Rayon, Turkmen SSR). Magpies generally congregated in cattle pastures and to a lesser degree in horse and camel pastures. The cows, similar to the Far Eastern spotted reindeer, were completely passive to the pecking of the birds.

Zoologists V. V. Gubar and A. I. Voylochnikov were able to trap 22 magpies. Ticks were found in the stomachs of 12 of the birds, which were trapped during the latter July and early August. Generally, each stomach contained from three to 30 ticks, thus permitting the investigation to obtain a fairly accurate picture of tick fauna in this region during the summer months. The results of studies are presented in the table below:

Ixodes Ticks in the Stomachs of Pica pica bactriana Bp.

	Date Collected	Place	Tick	Sex ♂	Sex ♀	Condition
1.	2/8	Kurudzhey	Hyaglomma anatolicum anatolicum Koch.	2	--	Well preserved specimens of both starved and blood sucking ticks
			H. detritum P. Sch.	--	1	
			Boophilus calcaratus Bir	1	--	
2	4/8	"	H. detritum P. Sch.	12	15	
			Rhipicephalus bursa Can. et Fanz.	1	--	
			Rh. turani sub B. Pom.	4	--	
3.	5/8		H. detritum P. Sch.	--	1	
			H. anatolicum anatolicum Koch.	3	3	
4.	14/8		H. anatolicum anatolicum Koch.	2	25	One female complete. One male with skin remains of its host on its hypostome

(Continued)

	Date Collected	Place	Tick	Sex ♂	Sex ♀	Condition
4.	1½/8		H. anatolicum excavatum Koch.	--	1	Starved as well
			H. detritum P. Sch.	--	2	as blood sucking
			Hyalomma sp	1	--	Part of the trunk
5.	14/8		H. anatolicum anatolicum Koch.	--	8	Starved as well as blood sucking
			Hyalomma sp.	1	--	Dorsal and ventral peritrema chitinized
			" "	1	--	Chitinized peritrema
6.	1/8	Duzlu-Tepe	H. detritum P. Sch.	--	1	
			H. anatolicum anatolicum Koch.	2	--	Starved and blood sucking
7.		"	H. detritum P. Sch.	2	2	
8.	2/8	"	H. anatolicum anatolicum Koch.	3	5	Two females complete
			H. detritum P. Sch.	--	5	
			H. anatolicum excavatum Koch.	--	1	Starved and blood sucking
			H. asiaticum P. Sch. et Schl.	--	1	
			Rh. turanicus B. Pom.	2	6	One female complete but for its hypostome
			Rh. bursa can et Fanz.	4	6	
9.	18/8	"	H. detritum P. Sch.	7	13	Five complete females
			H. aciaticum P. Sch. et Schl.	--	2	Starved and blood sucking
10.	29/8	"	H. anatolicum anatolicum Koch.	1	3	
			Hyalomma sp.	1	--	Hypostome, dorsal peritrema
			Rh. bursa Can et Fanz.	--	1	
11.	30/8	"	H. anatolicum anatolicum Koch	3	--	Starved and blood sucking
			Rh. bursa Can et Fanz.	1	--	
12.	1/9	Kara Kala	H. detritum P. Sch.	1	2	
			H. anatolicum excavatum Koch.	--	1	
			Total	55	105	

As can be seen from the table, some 160 ticks representing eight genera were identified in the stomachs of 12 birds. In addition, there were other ticks, but they were so thoroughly digested that identification was impossible. The birds were such excellent collectors that they contained every type of tick known to exist in that locality. In some cases ticks were using the birds themselves as hosts. For the most part, these were nymphs, and less frequently imagoes.

The inhabitants of Karakalinskiy Rayon, particularly herders and hunters, claim that starlings also pick ticks off animals. It has also been observed that birds feed off smaller horned cattle (goats, rams) and sometimes even pigs.

Generally, however, birds are observed on cows and camels. Some hunters have reported that magpies have been observed on boar carcasses. These were particularly infested with ticks. Hunters have also reported the fearlessness of magpies, which in many instances have continued eating ticks while the hunters were actually skinning dead boars. After the hides were hung up to dry, the magpies devoured every tick.

The above data characterize Far Eastern and Central Asiatic magpies as natural enemies of ticks. There can be no doubt that this activity of the magpies and starlings plays an important role in arresting the number of these harmful ecto-parasites.

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